

A NEW SPECIES OF *ALEODORUS* (COLEOPTERA: STAPHYLINIDAE) FROM COSTA RICA, AND GENERIC REASSIGNMENT OF *FALAGRIA COSTARICENSIS* TO *ALEODORUS*¹

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ABSTRACT: *Aleodorus maurenae*, new species of falagriine Staphylinidae, is described from Costa Rica. *Falagria costaricensis* Bernhauer is redescribed and transferred to *Aleodorus*. A lectotype is designated.

The genus *Aleodorus* was established by Say (1833) for the North American species *Aleochara bilobata*, also described by Say that same year. *Chitalia* was proposed by Sharp (1883) to accommodate four new species (*crenata*, *granigera*, *debilis*, and *dubius*) collected at various localities in Mexico and Central America. The latter genus was later determined to be a junior synonym of *Aleodorus* (Fenyés, 1912).

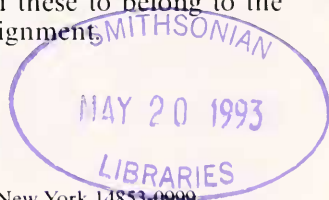
Members of *Aleodorus* are restricted to the Western Hemisphere. At present, four species are known to occur in America north of Mexico, with the Nearctic species having been revised by Hoebeke (1985). Blackwelder (1944) lists five species from Mexico and Central America, and one species from South America. Pace (1989, 1990) added 4 taxa to the existing South American fauna by describing 3 new species from Argentina, Peru, and Brazil, and by reassigning *Falagria discisa* Erichson (Brazil) to *Aleodorus*. The Neotropical species have not been revised.

In March and April 1973, specimens of a distinctive, yet unrecognized, species of *Aleodorus* were collected from Berlese samples of leaf mold and leaf litter in virgin forest in Puntarenas and Guanacaste provinces, Costa Rica, by J. Wagner and J. Kethley of the Field Museum of Natural History (Chicago). Specimens of this new species, which I discovered among recently prepared and unidentified Staphylinidae in the Field Museum collection (FMNH), are described below.

Furthermore, after examination and dissection of syntypes of *Falagria costaricensis* Bernhauer, I have found these to belong to the genus *Aleodorus* and herein propose this reassignment.

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Aleodorus maureenae, new species

(Figs. 1-6)

Diagnosis. In overall adult body size and in pronotal shape, *Aleodorus maureenae* is similar to *A. granigerus* (Sharp), but differs most noticeably by the very roughened surface of the head, thorax, and elytra caused by a dense, uniform covering of setiferous asperities.

Description. Agreeing with generic characters given by Hoebeke (1985).

Length 2.8-3.4 mm ($n = 9$, $\bar{x} = 3.2$ mm). Body color uniformly dark rufo-brunneous, with distal antennal articles, mouthparts, and, in some specimens, last two abdominal segments rufo-testaceous. Habitus as in Figs. 1-2.

Head (Fig. 1) quadrate, slightly longer than wide, posterior angles broadly rounded, posterior margin slightly arcuate to truncate. Eyes moderately large, prominent, their longest diameter nearly subequal to length of temple. Dorsal surface with a dense, uniform covering of asperities, each bearing a short, erect microseta; dorsum with narrow, median area between posterior margins of eyes, and median frontal prominence between antennal bases devoid of asperities smooth and glossy (see Fig. 1) (some specimens with smooth, glossy area between eyes appearing as small dimple, or absent altogether); cuticular surface between asperities smooth, glossy. Gena and ventral surface of head without asperities, smooth and glossy. Antennae moderately long, reaching anterior 0.4 of elytra; distal articles beyond article IV compactly organized; scape somewhat incrassate, nearly equal to length of article II; article II and III elongate, II slightly shorter than III; article IV somewhat quadrate, but slightly longer than wide; articles V-X becoming gradually more transverse; article XI obovate, slightly shorter than IX + X.

Pronotum (Fig. 1) slightly wider than head, broadest across anterior third, strongly narrowed and converging behind towards base; posterior angles nearly acute; posterior margin broadly truncate. Disc narrowly and deeply channeled along median line, channel terminating in deep, subbasal fovea; surface on either side of channel densely and uniformly covered with setiferous asperities; cuticular surface between asperities smooth and glossy. Scutellum large, flat, densely punctured (punctures minutely asperate), on either side of a broad smooth, slightly impressed, median channel.

Elytra (Figs. 1-2) about as long as prothorax, humeri well developed, lateral margins broadly arcuate posteriorly, posterior angles sinuate, posterior margin truncate; surface with a dense, uniform covering of setiferous asperities; in some specimens, asperities tending to be arranged in longitudinal series, and thus appearing somewhat costate; cuticular surface between asperities smooth, glossy.

Abdomen (Fig. 2) broad at base, but narrower than elytra. Terga III-V (first three visible tergites) broadly, transversely impressed at base; impressions coarsely foveate, each fovea limited laterally by distinct, flattened ridge; basins of foveae smooth and glossy, without microsculpture. Tergite VI slightly impressed at base with several obsolete ridges and foveae. Tergal surfaces posterior to basal impressions moderately densely punctured and pubescent, some punctures at most minutely asperate; cuticle smooth and glossy. Sterna III-V strongly constricted at base; basal constriction coarsely foveate (often visible in lateral view).

Male. Eighth tergite with apical margin broadly arcuate at middle, with comb of minute denticles. Median lobe of aedeagus as in Figs. 3-4. Paramere and apical lobe of paramerite as in Fig. 5.

Female. Eighth tergite with apical margin as in male. Spermatheca as in Fig. 6.

Secondary sexual characteristics. None apparent.

Material examined. Holotype: male, COSTA RICA: Puntarenas; OTS Sta. finca Las Cruces, 4000 ft.; San Vito; III:18:1973, 82°58'W-8°46'N, leg. J. Wagner, J. Kethley/FM(HD)#73-322, 73CRIII-18d FLC Berlese 1500cc. leaf litter in stream bed, away from

flowing water, steep banks, virgin forest cover. Terminalia, aedeagus and parameres mounted (in Euparal) on microslide and affixed below specimen. The holotype is deposited in the Field Museum of Natural History, Chicago (FMNH).

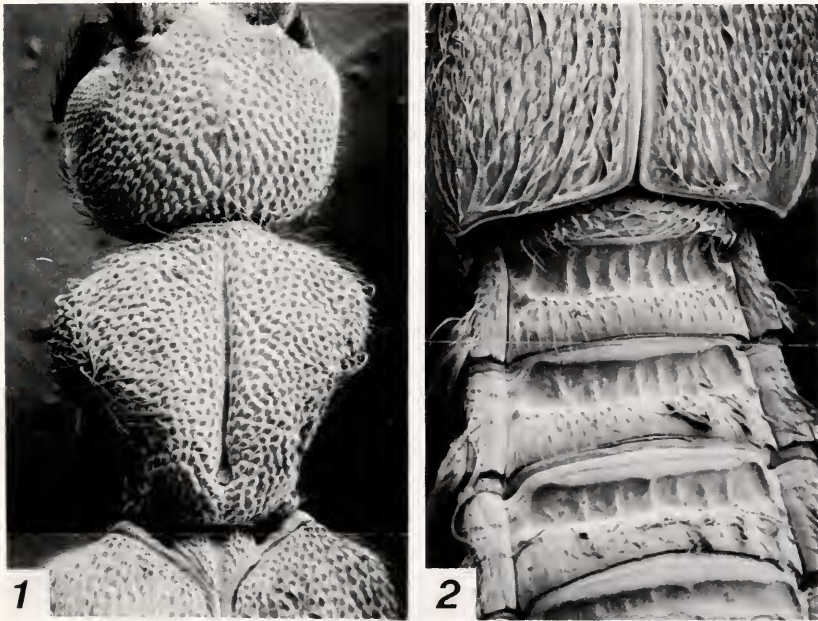
Paratypes, 9: Same data as holotype, 1; same data, except III:16:1973, 4; same data, except II:19:1973, 2; COSTA RICA: Guanacaste; Canas, Miravalles Volcano, 10°42'N-85°7'W; IV:8:1973, leg. J. Wagner, J. Kethley/FM(HD) #73-385, 73CRIV-8e; Berlese 2 liters conc. leaf litter + soil in dry rivulet #1, 1; same data, except FM(HD) #73-386, 73CRIV-8f, 1. Eight paratypes deposited in the FMNH; 1 paratype (female), with same data as holotype, except with the date III:16:1973, is deposited in the Cornell University insect Collection (CUIC).

Etymology. This elegant species is named for my wife, Maureen, who, over the years, has graciously provided encouragement and constant support of my work on the Staphylinidae.

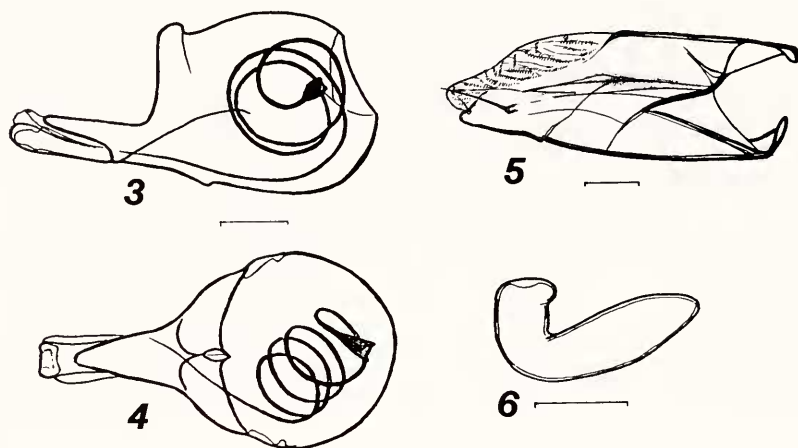
Geographic distribution. Known only from the type localities in Puntarenas and Guanacaste provinces, Costa Rica.

Bionomics. Little is known about the habitat of this species, but specimens at hand have been collected from Berlese samples of leaf litter in stream beds, in dry rivulets, and on slopes above stream banks in virgin forests of Costa Rica.

Remarks. Only slight external morphological variation exists between the populations from Puntarenas and Guanacaste provinces. The



Figs. 1-2. *Aleodorus maureenae* n. sp. (OTS Sta. finca Las Cruces, Puntarenas province, Costa Rica), scanning electron photomicrographs. 1, head, thorax, scutellum, and upper one-third of elytra, dorsal aspect. 2, lower two-thirds of elytra, and abdominal segments III-VI, dorsal aspect.



Figs. 3-6. *Aleodorus maureenae* n. sp. 3. Median lobe of aedeagus, lateral aspect. 4, Median lobe of aedeagus, dorsal aspect. 5, Paramere. 6, Spermatheca. Scale line, 0.1 mm.

ten specimens from Puntarenas province are slightly larger than those from Guanacaste province (2 specimens) (cf. 3.1-3.4 mm vs. 2.8 mm, respectively). Furthermore, the setiferous asperities on the heads of the Guanacaste specimens are slightly less dense (asperities separated by slightly more than their diameters) than on the heads of the Puntarenas specimens (asperities separated by less than or equal to their diameters). The density of the asperities on the thorax and elytra of the Puntarenas and Guanacaste specimens is similar. For all other external characters, specimens from the two Costa Rican localities are identical.

Generic Reassignment and Redescription of *Falagria costaricensis* Bernhauer

Bernhauer (1940) described *Falagria costaricensis* from Costa Rica. All subsequent authors and cataloguers have followed this original generic placement. The diagnostic morphological features of *Falagria* species [type species *Falagria caesa* Erichson, 1837 = *sulcata* (Paykull, 1789) nec (Müller, O. F., 1776)] include a bicarinate scutellum, comb of minute denticles on the apical margin of tergum VIII, margined hypomera, deep pronotal sulcus, and uniform elytral punctation.

I have carefully examined specimens of the syntype series of *F. costaricensis* and found them to belong to the genus *Aleodorus* Say [type species *Aleochara bilobata* Say]. Members of this genus are characterized

by the unique mesosternum which is on a different plane from that of the metasternum (mesosternum appears elevated), the short, abbreviated mesosternal process which does not extend between the coxae, and the long, generally coiled flagellum of the male aedeagus.

***Aleodorus costaricensis* (Bernhauer), new combination**

(Figs. 7-9)

Falagria costaricensis Bernhauer, 1940:159. Lectotype here designated: La Caja: 8 kil[ometers]. w[est]. San José, C[osta].R[ica]., Schmidt 1934/Handwritten "costaricensis Brnh. Typ" (white label)/Handwritten "costaricensis Brh. Typus Falagria" (red label)/Chicago NHMus. M. Bernhauer Collection/ LECTOTYPE *Falagria costaricensis* Bernhauer, desig. E. R. Hoebeke 1992 (red label) (FMNH).

Paralectotypes, 5, here designated: Same data as lectotype, with the additional labels: Syntypus (red label)/Bernhauer det./Coll. DEI Eberswalde/PARALECTO-TYPE *Falagria costaricensis* Bernhauer, desig. E. R. Hoebeke 1992 (red label) (IPFE).

Redescription. In agreement with generic characters given by Hoebeke (1985).

Length 2.1-2.6 mm. ($n = 5$, $\bar{x} = 2.4$ mm). Body color rufo-brunneous, with antennae (especially toward apices), mouthparts, and legs generally rufo-testaceous; in some specimens, basal three abdominal segments light rufo-brunneous.

Head somewhat quadrate, nearly as long as wide, posterior angles somewhat obtuse, posterior margin truncate to slightly arcuate; neck very slender, about 0.3 x head width across eyes. Eyes moderate in size, longest diameter slightly greater than temple length. Dorsal surface smooth and glossy, moderately sparsely, but uniformly punctured and pubescent, except for broad median area; punctures very fine, non-asperate. Antennae moderately long, reaching posteriorly to near 0.5 elytral length; articles I-III elongate; article III slightly longer than II; article IV somewhat quadrate, slightly longer than wide; articles V-X becoming gradually broader, more transverse; article XI obconical, pointed apically, slightly shorter than IX + X.

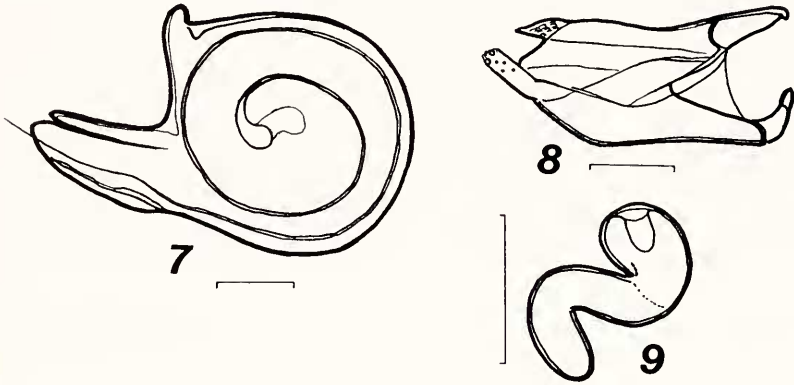
Pronotum subequal to width of head, broadest across anterior third, gradually narrowing and converging behind toward base; posterior angles acute; posterior margin truncate. Disc narrowly and deeply sulcate along median line, terminating in deep, subbasal fovea; surface on either side of sulcus sparsely punctured and pubescent; punctures very fine, non-asperate; surface between punctures smooth, glossy. Scutellum large, flattened, with fine, asperate punctures on either side of a broad, smooth, median channel.

Elytra approximately 1.2 x longer than pronotum, humeri well developed, lateral margins broadly arcuate in posterior half, posterior angles sinuate, posterior margin truncate; surface with moderately dense and uniform covering of very fine punctures and microsetae; area adjacent to scutellum with slightly more dense punctures; cuticular surface between punctures smooth and glossy.

Abdomen slightly narrower than elytra, parallel-sided, tapering to apex; terga III-V transversely impressed at base; impressions of terga III + IV with large, rather coarse, foveae, each bordered laterally by fine, slightly elevated, ridges (less so on tergum V); basins of large foveae obscurely granulate (with imbricate microsculpture); tergal surface posterior to basal impressions of terga III-V moderately sparsely punctured, pubescent; cuticle smooth and glossy.

Male. Eighth tergite with apical margin broadly arcuate at middle, with comb of minute denticles. Median lobe of aedeagus as in Fig. 7. Paramere and apical lobe of paramerite as in Fig. 8.

Female. Eighth tergite with apical margin as in male. Spermatheca as in Fig. 9. Secondary sexual characteristics. None apparent.



Figs. 7-9. *Aleodorus costaricensis* (Bernhauer). 7, Median lobe of aedeagus, lateral aspect. 8, Paramere. 9, Spermatheca. Scale line, 0.1 mm.

Remarks. The syntype series of *F. costaricensis* bears a striking resemblance to specimens identified as *Aleodorus dubius* (Sharp) from Mexico, Guatemala, and Costa Rica. There is close agreement in body length, coloration, pronotal configuration, punctation, and, more importantly, the genitalic characters of both sexes (shape of median lobe and coiled flagellum of aedeagus, apical lobe of paramerite, and spermatheca); these latter genitalic characters are virtually identical for the two species. Based on this evidence, I strongly suspect that these species are conspecific. However, I have not, as yet, examined the type series of *A. dubius*, and have studied only a limited number of identified specimens. Therefore, this hypothesis must remain tentative until a comprehensive revision of the Neotropical *Aleodorus* is completed.

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BOOKS RECEIVED AND BRIEFLY NOTED

SYSTEMATICS AND ECOLOGY OF THE SUBGENUS *IXODIOPSIS* (ACARI: IXODIDAE: *IXODES*). R.G. Robbins & J.E. Keirans. 1992. Thomas Say Fd., Entomol. Soc. Amer. 159 pp. \$25.00 ESA member. \$40.00 other.

The publisher states this is the first cladistic analysis within the Ixodidae and the first quantitative investigation of *Ixodes*. For the seven species of *Ixodiopsis*, all known host and distributional data are summarized, and dichotomous identification keys, accompanied by scanning electron photomicrographs, are provided.

CLASSIFICATION, CLADISTICS, AND NATURAL HISTORY OF NATIVE NORTH AMERICAN *HARPALUS* LATREILLE (INSECTA: COLEOPTERA: CARABIDAE: HARPALINI), EXCLUDING SUBGENERA *GLANODES* AND *PSEUDOPHIONUS*. G.R. Noonan. 1991. Thomas Say Fd., Entomol. Soc. Amer. 310 pp. \$30.00 ESA member. \$50.00 other.

This work revises the native North American species of *Harpalus* and includes keys to separate all North American members of the genus from those of other genera of No. Amer. Harpalini.